

ABSTRACT: FALL AGU MEETING

“Observations of the global heliospheric magnetic field during the recent Ulysses fast latitude scan”

by E.J.Smith, A.Balogh, R.J.Forsyth and D.J.McComas

In the fall of 2000, during the on-going solar maximum, Ulysses passed under the sun's south polar cap reaching a maximum latitude of -80.2° . The large scale field was highly structured at all latitudes consisting of solar wind compression and rarefaction regions interrupted by CMEs. The magnetic field polarity was dominated by two sectors at almost all latitudes except for a single negative polarity at the highest latitudes. The observations were consistent with a single current sheet that was highly inclined to the sun's rotation axis. No evidence was found of a change to a positive magnetic polarity at the pole as had been inferred from Earth-based magnetographs. The open magnetic flux, given by the product of the radial field component and the square of the radial distance, was found to be independent of latitude the same as observed at solar minimum and with the same average value. Ulysses is now executing another rapid traversal from the south polar cap across the solar equator to enter the north polar cap in September and exit it in December 2001. The large scale properties of the magnetic field, such as the sector structure, the variation of open flux with

latitude and the polarity in the north polar cap, will be reported and compared with observations in the southern hemisphere.